<u>Amendments to the Claims</u>:

1-34. (Canceled)

35. (Currently amended) A computer implemented method for displaying volatility between a successive sequence of data samples in a set of data samples, the method comprising:

selecting, from data [[input]] <u>inputted</u> into [[a]] <u>at least one</u> computer<u>, at least one data</u> pertaining to members of the group consisting of: stocks, stock options, bonds, currency exchange rates, microeconomic values, macroeconomic values, stock exchanges, personal stock portfolios, turnover, return on net asset, inflation rate, unemployment, sports, science, opinion polls, sports team performance, technology, physical experiments, and sociology, a successive sub-sequence s(p) of data samples for analysis in a set S of data samples s(p): = (pt0, . . . , pt1);

calculating, using [[a]] <u>the at least one</u> computer, a standard deviation $\overline{\sigma_{t_0,t_1}(p)}$ of the sub-sequence s(p) of data samples to derive an unscaled volatility thereof;

scaling, using [[a] <u>the at least one</u> computer, with a scale factor f the standard deviation $\overline{\sigma_{t_0,t_1}(p)}$ of the sub-sequence s(p) of data samples to derive a scaled volatility of the sub-sequence s(p) of data samples $\overline{\sigma_{t_0,t_1}(p)} \cdot f$, the scale factor f being dependent on a length of the sub-sequence s(p);

calculating, using [[a]] <u>the at least one</u> computer, a net change in value $R_{t,t+1}(p)$ between each set of successive data samples within the sub-sequence s(p) of data samples;

mapping, using [[a]] <u>the at least one</u> computer, to a Cartesian coordinate system with a first axis representing the net change in value between each set of successive data samples within the sub-sequence s(p) of data samples $R_{t,t+1}(p)$ and a second axis representing the scaled volatility of the sub-sequence s(p) of data samples $\overline{\sigma_{t_0,t_1}(p)} \cdot f$;

calculating, using [[a]] the at least one computer, a probability distribution of the net change;

determining, using [[a]] the at least one computer, a probability threshold value; and

determining, using [[a]] the at least one computer, a region within the Cartesian coordinate system associated with the probability distribution and the probability threshold value; and

outputting, using [[a]] the at least one computer, to a display on the Cartesian coordinate system the net change in value, within the determined region, between each set of successive data samples within the sub-sequence s(p) of data samples $R_{t,t+1}(p)$ in relation to the scaled volatility of the sub-sequence s(p) of data samples $\overline{\sigma_{t_0,t_1}(p)} \cdot f$ to ~~indicates~~ indicate to a user the scaled volatility between each set of successive data samples within the sub-sequence s(p) of data samples.

36. (Currently amended) The computer implemented method of claim 35, wherein the factor f [[is]], related to the square root of the length of the sequence, is given by $f=\sqrt{(t_1-t_0)}$, where t_0 and t_1 define the start time and the end time of a time interval of the sub-sequence of data samples, respectively.

37. (Currently amended) The computer implemented method of claim 35, wherein said data input further includes a dimension selected from the group consisting of: time, length, energy, and speed.

38. (Previously presented) The computer implemented method of claim 35, wherein the probability distribution is a Gaussian distribution.

39. (Previously presented) The computer implemented method of claim 35, wherein the probability threshold value is equal to one of the standard deviation and the standard deviation times an integer value.

40. (Currently amended) The computer implemented method of claim 35, wherein the region has the form of one of a cone [[and]] or the projection of a cone.

41. (Currently amended) The computer implemented method of claim 35, wherein each of the data samples are correlated to a price value, and the ~~difference~~ net change is correlated to a return.

42. (Currently amended) The computer implemented method of claim 35, wherein data pertaining to price is selected, and each data sample is a price fixing within an intraday ~~price fixing~~ time period.

43. (Previously presented) The computer implemented method of claim 35, further comprising displaying a boundary of the region within the Cartesian coordinate system.

44. (Previously presented) The computer implemented method of claim 35, further comprising displaying a number of K frames FRj, each of the frames FRj visualizing one of a corresponding set of points p0 to pi and a sub-set of the set of points.

45. (Previously presented) The computer implemented method of claim 35, further comprising decreasing the brightness and/or contrast of a set of points displayed on the first axis and the second axis, wherein the set of points indicate the net change in value between each set of successive data samples.

46. (Currently amended) The computer implemented method of claim 35, wherein the first ~~sequence~~ sub-sequence selected, of the successive sub-sequences, covers an intraday period.

47. (Previously presented) The computer implemented method of claim 35, further comprising:

defining a hierarchical tree structure, the tree structure providing an index structure for accessing a database;

providing a plurality of sequences each composed of data samples, and

storing said plurality of sequences of data samples, the data samples being ordered in a time series, and each of the sequences being associated with a leaf of the hierarchical tree structure.

48. (Previously presented) The computer implemented method of claim 47, wherein the database contains a plurality of files, each file storing a predefined set of sequences, with the set of sequences stored in each file being associated with a specific distinct entity and being accessible by an identifier of the specific distinct entity.

49. (Previously presented) The computer implemented method of claim 48, wherein the specific distinct entity is a predetermined group of stock values, a stock portfolio, or a stock or other financial index.

50. (Previously presented) The computer implemented method of claim 47, further comprising:

storing a number of user defined portfolios which are retrievable by a key;

retrieving sequences of data samples corresponding to a user defined portfolio, upon a user request, by querying the database;

providing the user with the sequences of data samples;

updating the sequences of data samples at regular time intervals; and

discontinuing the updating process when a user has failed to perform an action during a predefined time interval.

51. (Previously presented) The computer implemented method of claim 35, wherein the mapping step is further adapted to determine a region within the Cartesian coordinate system in which a point is situated with a probability being equal to a predetermined probability value, the determination of the sub-space being made responsive to the predetermined probability value and a probability distribution.

52. (Previously presented) The computer implemented method of claim 35, wherein the mapping further includes mapping to the Cartesian coordinate system with the first axis representing the net change in value between each set of successive data samples within the sub-sequence s(*p)* of data samples $R_{t,t+1}(p)$ and the second axis representing the scaled volatility of the sub-sequence s(*p)* of data samples $\overline{\sigma_{t_0,t_1}(p)} \cdot f$ using a logarithmic grid.

53. (Previously presented) The computer implemented method of claim 35, wherein the regions are displayed in the Cartesian coordinate system as a line.

54. (Currently amended) A computer program product for displaying volatility between a successive sequence of data samples in a set of data samples, the computer program product comprising instructions ~~for~~ which perform the following functions when executed on at least one computer:

selecting, from data [[input]] inputted into [[a]] the at least one computer, at least one data pertaining to members of the group consisting of: stocks, stock options, bonds, currency exchange rates, microeconomic values, macroeconomic values, stock exchanges, personal stock portfolios, turnover, return on net asset, inflation rate, unemployment, sports, science, opinion

polls, sports team performance, technology, physical experiments, and sociology, a successive sub-sequence s(p) of data samples for analysis in a set S of data samples s(p): = (pt0, . . . , pt1);

calculating, using [[a]] <u>the at least one</u> computer, a standard deviation $\overline{\sigma_{t_0,t_1}(p)}$ of the sub-sequence s(p) of data samples to derive an unscaled volatility thereof;

scaling, using [[a]] <u>the at least one</u> computer, with a scale factor f the standard deviation $\overline{\sigma_{t_0,t_1}(p)}$ of the sub-sequence s(p) of data samples to derive a scaled volatility of the sub-sequence s(p) of data samples $\overline{\sigma_{t_0,t_1}(p)} \cdot f$, the scale factor f being dependent on a length of the sub-sequence s(p);

calculating, using [[a]] <u>the at least one</u> computer, a net change in value $R_{t,t+1}(p)$ between each set of successive data samples within the sub-sequence s(p) of data samples;

mapping, using [[a]] <u>the at least one</u> computer, to a Cartesian coordinate system with a first axis representing the net change in value between each set of successive data samples within the sub-sequence s(p) of data samples $R_{t,t+1}(p)$ and a second axis representing the scaled volatility of the sub-sequence s(p) of data samples $\overline{\sigma_{t_0,t_1}(p)} \cdot f$;

calculating, using [[a]] <u>the at least one</u> computer, a probability distribution of the net change;

determining, using [[a]] <u>the at least one</u> computer, a probability threshold value; and

determining, using [[a]] <u>the at least one</u> computer, a region within the Cartesian coordinate system associated with the probability distribution and the probability threshold value; and

outputting, using [[a]] <u>the at least one</u> computer, to a display on the Cartesian coordinate system the net change in value<u>, within the determined region,</u> between each set of successive data samples within the sub-sequence s(p) of data samples $R_{t,t+1}(p)$ in relation to the scaled volatility of the sub-sequence s(p) of data samples $\overline{\sigma_{t_0,t_1}(p)} \cdot f$ to ~~indicates~~ <u>indicate</u> to a user the scaled volatility between each set of successive data samples within the sub-sequence s(p) of data samples.